

AMENDMENTS TO THE CLAIMS

1. (Currently amended) An apparatus for measuring the center of rotation of jaw motion and the track thereof, the apparatus comprising:

a pair of fixed markers attached to the left side and right side of patient's face respectively;

a pair of movable markers disposed to face the fixed markers in a spaced distance and moving in unison with the movement of the lower jaw of patient;

a coupling device for connecting the movable markers ~~marker~~ to the lower jaw of patient;

a plurality of cameras for recording the movement of the movable markers ~~marker~~ relative to the fixed markers ~~marker~~, according to the movement of lower jaw; and

a control device for receiving and processing the image signals fed from connected cameras,

wherein the fixed markers have the shape of a plate, and a borderline with a specific color is provided at the edge of each fixed marker for the easy discrimination from the surroundings, and a plurality of quadrangles are arrayed in a checkered pattern inside the borderline which is formed on the surface of the fixed markers.

2. (Currently amended) The apparatus of claim 1, wherein two cameras are positioned at each side of patient's face to measure the three-dimensional movement of a respective ~~the~~ movable marker relative to a respective ~~the~~ fixed marker.

3. (Canceled)

4. (Currently amended) The apparatus of claim 1 [[3]], wherein the fixed markers ~~each have~~ ~~marker~~ has a corner point extraction marker formed on the borderline for the extraction of corner point which is needed to establish the fixed marker local coordinate system, and the corner point extraction marker has a different color from the borderline.

5. (Canceled)

6. (Currently amended) The apparatus of claim 1, wherein the movable markers ~~have marker~~ has the shape of a plate and a smaller size than the fixed markers ~~marker~~, and each ~~the~~ movable marker has a borderline at the edge with a specific color for the easy discrimination from the surroundings.

7. (Currently amended) The apparatus of claim 6, wherein a plurality of quadrangles are arrayed in a checkered pattern on the surface of each ~~the~~ movable marker, and each ~~the~~ movable marker has the shape of a quadrangular plate.

8. (Currently amended) The apparatus of claim 7, wherein each ~~the~~ movable marker has a corner point extraction marker with a different color for the extraction of corner point which is needed to establish the movable marker local coordinate system, and the corner point extraction marker is identified as the pairs of quadrangles located in the four corners of the movable marker.

9. (Currently amended) The apparatus of claim 1, wherein the coupling device comprises:

a cross bar;

a holding fixture, one end of which is anchored on the lower jaw of patient and the other end of which is rotatably connected to the mid-point of the cross bar;

a pair of translation frames connected to the both ends ~~end~~ of the cross bar in a manner that the translation frame can make translational and rotational movement; and

a pair of measuring frames ~~frame~~, at least one of the measuring frames having one end ~~of which~~ is connected to the translation frame in a manner that the measuring frame can make a straight motion in the orthogonal direction to the cross bar, and the other end ~~of which~~ is connected to one of the movable markers ~~marker~~.

10. (Currently amended) The apparatus of claim 9, wherein said one ~~the~~ movable marker is removably connected to the other end of the measuring frame.

11. (Currently amended) The apparatus of claim 10, further comprising a pointer ~~wherein, in place of the movable marker, a pointer is alternatively connectable~~ connected to the other end of the measuring frame in place of a moveable marker to represent the center of rotation of lower jaw of patient on the surface of a respective ~~the~~ fixed marker or the face of patient.

12. (Currently amended) The apparatus of claim 1, further comprising a pointer to represent the center of rotation of lower jaw of patient on the surface of each ~~the~~ fixed marker or the face of patient, wherein the pointer is alternatively attachable to the coupling device in place of at least one of the movable markers ~~marker~~.

13. (Original) The apparatus of claim 1, wherein the control device is a personal computer.

14. (Original) The apparatus of claim 1, further comprising an orbital plane marker attached to a specific location around patient's eye to measure an orbitales, and the orbitales is used to define the orbital plane.

15. (Currently amended) The apparatus of claim 14, wherein the orbital plane marker has the shape of a thin plate, and a borderline with a specific color is provided at the edge of the orbital plane marker for the easy discrimination from the surroundings.

16. (Original) The apparatus of claim 14, wherein four quadrangles are arrayed in a checkered pattern inside the borderline of the orbital plane marker, and the corner point of the orbital plane marker is identified as the point where corners of four quadrangles meet each other.

17-20. (Canceled)